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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/710,797	08/03/2004	Daniel W. Jones	34926	6746
23589	7590	10/07/2005		
HOVEY WILLIAMS LLP 2405 GRAND BLVD., SUITE 400 KANSAS CITY, MO 64108			EXAMINER TRIEU, THAI BA	
			ART UNIT 3748	PAPER NUMBER

DATE MAILED: 10/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/710,797	Applicant(s) JONES ET AL.	
	Examiner Thai-Ba Trieu	Art Unit 3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-69 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) See Continuation Sheet is/are rejected.
- 7) ☒ Claim(s) 5,10,13,14,17,19,21-23,25,27,31,39,40,42,43,45,46,51,56,60,63,65 and 67-69 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>01/18/2005</u> . | 6) <input type="checkbox"/> Other: ____ |

Continuation of Disposition of Claims: Claims rejected are 1-4,6-9,11,12,15,16,18,20,24,26,28-30,32-38,41,44,47-50,52-55,57-59,61,62,64 and 66.

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DETAILED ACTION

Specification

Since the abstract is too long, applicants are required to submit a substitute Abstract to meet the requirement set forth below.

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within **the range of 50 to 150 words**. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The disclosure is objected to because of the following informalities:

Applicant should elect only one of the following term to recite the element

"34" in order to maintain the consistency of the whole disclosure.

- main case sections 34 (See Paragraph [0039], lines 8-9);
- hood 34 (See Paragraph [0040], lines 1 and 7; Paragraph [0041] line 1).
- section 34 (See Paragraph [0039], line 17; Paragraph [0041], lines 1 and 3).

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 16, 18, 20, 37, 41, 44, 62, 64, and 66 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically,

The recitation of "***can flow***" renders the claim indefinite, since it is not clear that under which condition the induction fluid can flow, and under which condition the induction fluid cannot flow through said passage way/ said additional passage way/said second additional passage way. Applicants are required to identify each condition.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 6-9, 11-12, 15-16, 24, 26, 28-30, 32-34, 36-38, 47-50, 52-55, 57-59, and 61-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buchi (Patent Number 2,296,268), in view of Gregg (Patent Number 1,998,778).

Buchi discloses a multiphase centrifugal supercharging air induction system for supplying compressed induction fluid to an intake manifold (20) of an internal

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combustion engine (7) wherein the engine includes a rotatable crankshaft (10), said induction system comprising:

a first centrifugal supercharger (13) drivingly connectable to the crankshaft (10) and operable to compress induction fluid for the engine (See Figure 3),

said first supercharger including a first inlet, (not Numbered) a spaced first outlet (via 22), and a first impeller (26) fluidly between the first inlet and first outlet to compress induction fluid (See Figure 3);

a second centrifugal supercharger (15) (See Figure 3),

said second supercharger (15) including a second inlet (23), a spaced second outlet (Not Numbered), and a second impeller (Not numbered) fluidly between the second inlet and second outlet to compress induction fluid (See Figure 3);

an induction fluid flow control assembly (28, 29) fluidly intercommunicating the superchargers (13, 15) so that the superchargers cooperatively provide induction fluid to the engine in a number of operating phases, including a first phase in which at least some induction fluid from the first outlet is supplied to the second inlet and a second phase in which at least some induction fluid from the first and second outlets is supplied to the intake manifold without passing through the other supercharger (See Figure 3);

said first and second impellers (13, 15) being rotatable, each being operable to compress induction fluid for the engine when rotated (See Figure 3);

said induction fluid flow control assembly (28, 29) fluidly intercommunicating the superchargers so that in all operating phases both superchargers compress at least some induction fluid for the engine whenever the crankshaft is rotating (See Figure 3);

said induction fluid flow control assembly being operable to fluidly intercommunicate the superchargers with the intake manifold so that in all operating phases substantially all of the induction fluid compressed by each of the superchargers is delivered to the intake manifold (20);

said first phase including a series phase in which substantially all induction fluid from the first outlet is supplied to the second inlet (See Figure 3);

said first phase further including a first transition phase, said induction fluid flow control assembly being configured to switch operation of the superchargers from the series phase to the first transition phase in response to a predetermined condition (See Figure 3);

said second phase including a parallel phase in which substantially all induction fluid from the first and second outlets is supplied directly to the intake manifold (See Figure 3);

said second phase further including a second transition phase, said induction fluid flow control assembly (28, 29) being configured to switch operation of the superchargers from the second transition phase to the parallel phase in response to a predetermined condition (See Figure 3);

said induction fluid flow control assembly (28, 29) including a passageway (22) fluidly communicating said first outlet and said second inlet, said induction fluid flow control assembly (28, 29) further including a first valve (28) disposed along said passageway (22) for controlling the flow of induction fluid there through (See Figure 3);
and

said first valve (28) shiftable between an open position wherein induction fluid can flow through said passageway and a closed position wherein induction fluid is prevented from flowing through said passageway, said first valve (28) shiftable into a plurality of intermediate positions between said open and closed positions wherein the quantity of induction fluid allowed to flow through the passageway varies from one intermediate position to another (See Figure 3, Page 2, Column 1, lines 44-75, Column 2, lines 1-54).

However, Buchi fails to disclose a second centrifugal supercharger drivingly connectable to the crankshaft and operable to compress induction fluid for the engine; a drive assembly; said first and second superchargers including a transmission; and the structural details of the transmission.

Gregg teaches that it is conventional in the supercharger art, to utilize a second centrifugal supercharger (8, 9) drivingly connectable to the crankshaft and operable to compress induction fluid for the engine (See Figure 1); a drive assembly (10, 11) operable to drivingly connect the superchargers to the crankshaft so that each of the superchargers operates continuously with rotation of the crankshaft (See Figure 1); said first and second superchargers including a transmission (15, 17, 54, 55, 14, 15, 106) drivingly connecting the impellers to the drive assembly (10, 11), said transmission (15, 17, 54, 55, 14, 15, 106) cooperating with the drive assembly to maintain rotation of the impellers at a substantially constant ratio relative to the rotation of the crankshaft (See Figure 1, Page 1, Column 1, lines 5-65); said transmission (15, 17, 54, 55, 14, 15, 106)

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including a plurality of intermeshing gears with at least one (17) of said gears (15, 17, 54, 55, 14, 15, 106) being common to both superchargers (8, 9) (See Figure 1).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a second centrifugal supercharger drivingly connectable to the crankshaft and operable to compress induction fluid for the engine; a drive assembly; said first and second superchargers including a transmission; the structural details of the transmission; as taught by Gregg, to improve the control of both turbochargers/superchargers in the Buchi device.

Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Buchi (Patent Number 2,296,268), in view of Gregg (Patent Number 1,998,778), and further in view of Moller (Pub. Number DE 198 22 874 A1).

The modified Buchi discloses the invention as recited in the rejection of claim 24 as set forth above; however, fails to disclose both superchargers being substantially within a case.

Moller teaches that it is conventional in the charged internal combustion engine art, to utilize both superchargers substantially housed within a common housing (3) (See Figures 1-2).

It would have been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized a common casing for housing both superchargers, to improve the efficiency of the modified Buchi device, since the use thereof would have

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made the supercharger compact and improve supercharging efficiency by housing both superchargers in one common casing.

Allowable Subject Matter

Claims 5, 10, 13-14, 17, 19, 21-23, 25, 27, 31, 39, 40, 42, 43, 45-46, 51, 56, 60, 63, 65, and 67-69 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 18, 20, 41, 44, 64, and 66 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

The IDS (PTO-1449) filed on January 18, 2005 has been considered. An initialized copy is attached hereto.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Wang (US Patent Number 6,935,838 B1) discloses a high-pressure multi-stage centrifugal blower.

- Codan et al. (US Patent Number 5,564,275) disclose a method and an apparatus for high-pressure end exhaust gas recirculation on a supercharged internal combustion engine.

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- Yingling (US Patent Number 2,401,677) discloses two-cycle internal combustion engine.
- Matsunaga (Patent Number JP 63-201319 A) discloses a twin turbo-supercharger.
- Inaba et al. (Patent Number JP 06-146908 A) disclose an engine with exhaust turbocharger.
- Tajima et al. (Patent Number JP 63-179126 A) disclose an intake device for an engine associated with mechanical supercharger.
- Sato et al. (Patent Number JP 61-197732 A) disclose a variable cylinder internal combustion engine.
- Hans et al. (Patent Number GB 2 302 914 A) disclose a mounting exhaust driven turbochargers on a supporting housing.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai-Ba Trieu whose telephone number is (571) 272-4867. The examiner can normally be reached on Monday - Thursday (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

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Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TTB
September 14, 2005



Thai-Ba Trieu
Primary Examiner
Art Unit 3748